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EVIDENCE THAT MANY BIRDS REMAIN MATED FOR A NUMBER OF YEARS

By N. K. CARPENTER

WHILE reading an article by Mr. F. C. Willard in a recent number of THE CONDOR, entitled "Evidence that many birds remain mated for life", numerous incidents were recalled by the writer tending to bear out Mr. Willard's conclusions. I have long held the same general idea as was advanced in his paper, but believe further that "separation for cause" is not by any means unknown in the bird world. It might also be stated that the instinct to return to the former nesting site is probably equally strong in both male and female. This is shown by the fact that while a certain pair of birds that nest in the same place for several years will have individual characteristics so pronounced that the location of the nest, and type of markings and shape of the eggs, can be told in advance to a certainty, as stated by Mr. Willard, there will suddenly be a change. The same location is still used, but the eggs are entirely different. A new female apparently is in possession, evidently brought there by the male of the former pair. His spouse may have died or grown too old to rear a family, but it was probably a good and sufficient reason.

The Dotted Canyon Wren (*Catherpes mexicanus punctulatus*) is one of our local species that will return to the same niche in a boulder year after year to rear a family. I have under observation one pair that was first located in 1905. The nest was on a shelf about eight inches square in the side of an immense boulder. This little pot-hole was used to my knowledge in 1905, 1907, 1908, 1909, 1910, 1911, 1913 and 1917. It was not visited in 1906 or 1912, but I have little doubt that the spot was used these years. In 1914 the birds were present, but the nest had been removed, and they had evidently decided on a change of location. It was not until 1917 that they returned to the old nook, although the birds were seen close by each year. The nest and set of eggs were taken, and the past spring (1918) the pair moved to a narrow crack about twenty-five feet away in the same boulder pile. Judging from the markings of the eggs during this period of years the male changed mates or secured a new one but once. The set always consisted of five eggs excepting upon one occasion when six were laid. April 9 was the earliest date that the clutch was found completed and April 25 the latest. Other pairs of this species that I have found in the last few years always return to the old nest if it is not disturbed, even though the set of eggs may have been taken, but the histories of these birds, so far as I know them, are short in comparison with that of the pair just cited.

Our hummingbirds also are easily watched. A Black-chinned Hummingbird (*Archilochus alexandri*) that I know of, built a nest on an electric wire within six inches of a porch light for four successive years. The current was on every evening, but the light did not seem to disturb the bird, who reared one family each season. Another of the same species has constructed its nest for the past four years under an old log bridge, for three successive seasons a new story being added to the old nest. There is a small ravine near here lined with a few stunted sycamores where several hummingbirds, both Black-chinned and Costa (*Calypte costae*) nest each year. In fact, these birds are so consistent in returning to this particular gully that we have named it Hummer Canyon.

I find the Flycatchers very persistent also. One pair of the Ash-throated (*Myiarchus cinerascens cinerascens*) has returned to the same old cavity in an oak tree for the past four seasons, while several other pairs I have watched have each nested two or three times in their own particular stump or cavity. A change by them is generally caused by the old site being destroyed. Our Black Phoebe (*Sayornis nigricans*) having once built a nest will return the following year and use it again after supplying a new lining. This I have found to be the case a number of times. I have seen nests of our Western Kingbird (*Tyrannus verticalis*) two and three stories high, indicating the number of years the nest had been used.

Mr. Willard's experience with the Cabanis Woodpecker (*Dryobates villosus hyloscopus*) is identical with mine. In 1917 I collected a set from a stump that held three other perfect excavations of previous years. This was a small dead cottonwood not over ten feet high, and though there were a great many other similar stumps in the grove, this was the only one that I could locate that contained an excavation of this species.

Our Roadrunners (*Geococcyx californianus*) lay in their chosen cactus patches each year and I have taken as many as three sets from the same nest in successive years. The Raven (*Corvus corax sinuatus*) can be counted on to return to the old home each year, but if disturbed a new nest is usually built the next spring in another ledge or crack nearby.

Members of the sparrow family as a rule are more uncertain, although they return to the same general locality. This is due, I think, to the nature of the location where their nests are placed; for, if substantial forks or hollows were used, I believe we would find the birds returning to the identical spot on successive years. To illustrate the point: Some eight years ago I ran across a few clumps of bunch-grass growing on the side of a steep ravine, under one of which was a slight depression in the hard decomposed granite soil. This was almost hidden by the overhanging grass, and a number of broken eggshells of the Valley Partridge were lying about, showing that a family had been raised there. It appeared to be an ideal spot for the home of a Rufous-crowned Sparrow (*Aimophila ruficeps ruficeps*). Each year, when in this locality, I examined the spot, but not until 1917 was I rewarded. That year the cavity contained a nest and four young of this sparrow. The past spring I was on the ground early, and sure enough the site held a nest and four eggs of the species.

I find the Least Vireo (*Vireo belli pusillus*) very persistent in returning to the same clump of trees to nest, and have taken several sets within a foot or two of the spot where the nest of each previous year had been suspended.

The Plain Tit-mouse (*Baeolophus inornatus*) offers a good study along this line. While living at Palo Alto some years ago I had a pair that laid nicely spotted eggs, and I was able to collect two sets on successive years from this pair. The nest each time was built in the same cavity of a live oak. You can be sure that I would return and look at that hollow if I ever were near Palo Alto at the proper season, although the last set I took was ten years ago.

The Raptors offer the best and most easily followed of any of the orders. A pair of Golden Eagles (*Aquila chrysaetos*) I have in mind was watched quite closely for eighteen years. The female of the pair when first encountered was quite old and very white. After a number of years the type of eggs suddenly changed and a dark colored bird was found in possession of the home. The old female can still be seen hunting by herself just off the old range, being easily

identified by the large number of white feathers. She has been divorced for the past ten years and is apparently living a single life.

Many other species and pairs could be cited, but as yet we have only circumstantial evidence on which to base the conclusions set forth in the first paragraph.

Escondido, California, November 15, 1918.

PARASITISM OF NESTLING BIRDS BY FLY LARVAE

By O. E. PLATH

DURING the summer of 1913, while studying bird life in and about Berkeley, California, I fed up some fifty to sixty wild-taken nestlings which included the following species: California Purple Finch (*Carpodacus purpureus californicus*), California Linnet (*Carpodacus mexicanus frontalis*), Willow Goldfinch (*Astragalinus tristis salicamans*), Green-backed or Arkansas Goldfinch (*Astragalinus psaltria hesperophilus*), Lawrence Goldfinch (*Astragalinus lawrencei*), and Lazuli Bunting (*Passerina amoena*). In most instances these nestlings were taken a few days before they were full-fledged, together with nest and surrounding branches. Before being taught to eat by themselves, they were fed by means of a curved stick in bird fashion, that is to say not forcibly, but by making them realize that they could get food from the beak-shaped end of the stick as they did formerly from the beaks of their parents. This method of feeding usually extended over a period of from several hours to several days, depending upon the age and intelligence of the nestlings.

After having succeeded in feeding up several broods without loss, I attempted to rear a nest of five Green-backed Goldfinches, but despite the fact that all five ate readily from the stick, all but one died in a few days. On taking this nest of goldfinches, I had noticed that two or three of the nestlings had swollen eyelids, in some cases swollen to such an extent that it was impossible for the nestlings to open their eyes. Just previous to this time I had contracted a severe case of oak poisoning while roaming through the underbrush in the canyons and along the creeks, and thought that perhaps the nestlings might be afflicted with the same malady. While feeding them, I had noticed furthermore that their mouths were considerably paler than those of the birds which had been fed up previously. They also appeared less vigorous and did not exhibit the same ravenous appetite which healthy nestlings show. Their mouths became paler and paler and within two or three days four of the nestlings died, as I have already mentioned, and even the remaining one looked as though it would not live long. In order to keep it warm, I removed it from the nest and placed it in some warm woolen cloth. To my surprise I noticed a number of maggots, similar in size and form to bumble-bee larvae (about 1.5 cm. in length and 0.5 cm. in width), crawling about in the nest. Upon picking the latter apart, I found some twenty or thirty of these maggots. They were creamy white in color and the anterior end of the alimentary canal of a number of them contained a bright red substance which changed to a blackish brown color in the posterior part of the intestinal tract. The other maggots contained the same blackish brown substance, but not the red.